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Docket No.: 1454.1212

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:

Christian ENSEL et al.

Application No.: 10/042,278

Group Art Unit: 2152

Filed: January 11, 2002

Examiner: Dohm Chankong

For: SYSTEM FOR MONITORING TELECOMMUNICATION NETWORK AND TRAINING
STATISTICAL ESTIMATOR

APPELLANTS' BRIEF IN REPLY UNDER 37 C.F.R. § 41.41

Mail Stop - Appeal Brief - Patents
Commissioner for Patents
PO Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In response to the Examiner's Answer mailed April 21, 2008 in the above-identified application, Appellants submit this Reply Brief having a response due date of June 21, 2008.

The grounds of rejection listed in the Examiner's Answer at pages 4-10 are substantially similar to those outlined in Office Action mailed October 31, 2006 and relied upon in the Final Office Action mailed April 3, 2007, and have been addressed already in the Appeal Brief.

The Response to Arguments in Section (10) starts on the ninth (unnumbered page) and continues for three full pages and 3 lines at the top of the last page. The following comments are directed thereto.

Applicants submit that Waclawsky et al. and Nuansri et al., taken alone or in combination, fail to describe "determining from the possible dependences a normal range of dependence for at least some of the devices and services essentially undisturbed states to train a neural network as a statistical estimator" as recited by claim 1 (lines 7-9).

In the second paragraph of Section 10.I.B, the Examiner's Answer stated, Waclawsky discloses determining from the possible dependences a normal range of dependence... training a rule-based network as a statistical estimator (col. 4, lines 41-54) and using this estimator to compare current activity parameters with a normal range of dependence (col. 4, line 55 to col. 5, line 4).

(Examiner's Answer, tenth page, lines 11-14). However, Waclawsky et al. discloses a rule-based system consisting of a number of manually defined rules representing what the rule-based system's designers consider to be an expert in the field's knowledge base. In contrast, a statistical estimator, such as the neural network recited in claim 1, does not require an expert to create rules. The statistical estimator as recited by claim 1, represents the required knowledge after training in implicit form. Accordingly, the rule based system as described in Waclawsky et al. does not describe the trained "statistical estimator" as recited by claim 1 (see for example, Specification, paragraph [0051]).

In addition, the Examiner's Answer in Section 10.I.B, conceded that Waclawsky et al. is silent as to training a *neural network* as a statistical estimator, but refers to the teachings of BRAINNE in Nuansri et al. as curing this deficiency. This assertion is respectfully traversed.

Nuansri et al. describes the training of BRAINNE using log files to retrieve error messages. As described in Section 6.1 of Nuansri et al., the input data of the neural network system consists of "a set of error messages as input classes and a set of corresponding faults as output classes." In other words, Nuansri et al. describes training the network with errors, which does not equate to "determining from the possible dependences **a normal range of dependence... essentially undisturbed states to train a neural network as a statistical estimator**" as recited by claim 1 (lines 7-9, emphasis added). Moreover, as shown in Figure 13 of Nuansri et al., BRAINNE *outputs* to the rule-based system (NEXPERT KB) in the sub-graph labeled "Learning Process" and the rule-based system (NEXPERT interface). In other words, the network in Nuansri et al. merely describes using a pre-processing unit to build the knowledge base of a rule-based system and no suggestion of a neural network that could be used as a monitoring or diagnosing system like the "statistical estimator" of claim 1 has been found in Nuansri et al.

In Section 10.I.A, lines 11-15, the Examiner's Answer stated that based on the outer limit set by the benchmark data, a person of ordinary skill in the art would have reasonably concluded the Waclawsky et al. taught a range from zero (or no network usage) to the upper limit set by the benchmark. By asserting the lower boundary is set at no network usage, the alleged "range" in Waclawsky et al. does not describe a situation where a value can fall below the range (i.e., less than no network usage). Accordingly, Applicants submit that the limit set by the benchmark data in Waclawsky et al. merely describes a single *threshold* and not "a normal range of dependence" as recited by claim 1.

In the October 21, 2006 Office Action, Nuansri et al. was relied upon as disclosing the statistical estimator of claim 1 and all other operations recited in claim 1 were allegedly taught or suggested by Waclawsky et al. However, Waclawsky et al. teaches away from using a statistical estimator training system as recited by claim 1 because in direct contrast to a neural network system, Waclawsky et al. relies on a rule based system. In Section 10.I.C, lines 14-16, the Examiner's Answer stated that Nuansri et al. discloses that a problem with a pure rule-based system such as the one taught in Waclawsky et al. is its inability to handle network management at the application level and Nuansri et al. incorporates the use of a neural network to provide support for this problem. Applicants submit, however, that although Nuansri et al. describes a hybrid system that puts a neural network system in a serial connection with a rule-based system, the neural network system is a mere pre-processor to a rule-based system, and therefore, there is no motivation to combine Nuansri et al. with Waclawsky et al. because the knowledge base in Waclawsky et al. is predefined, and if Nuansri et al. is combined with Waclawsky et al., the result would be an expert system with a neural network used as a pre-processor, not "a neural network as a statistical estimator".

Accordingly, for at least the reasons discussed above, Applicants submit that Waclawsky et al. and Nuansri et al., taken alone or in combination, fail to describe "determining from the possible dependences a normal range of dependence for at least some of the devices and services essentially undisturbed states to train a neural network as a statistical estimator" as recited by claim 1 (lines 8-10).

Summary

For the reasons set forth above and in the Appeal Brief and the Amendments filed during prosecution of the application, it is submitted that claims patentably distinguish over the prior art cited in rejecting the claims. Thus, it is respectfully submitted that the Examiner's final rejection of the claims is without support and, therefore, erroneous. Accordingly, the Board of Patent Appeals and Interferences is respectfully urged to so find and to reverse the Examiner's final rejection.

Respectfully submitted,

STAAS & HALSEY LLP

Date: 6/23/08

By: Richard A. Gollhofer
Richard A. Gollhofer
Registration No. 31,106

1201 New York Avenue, N.W., 7th Floor
Washington, D.C. 20005
Telephone: (202) 434-1500
Facsimile: (202) 434-1501